Statement of Basis
WestRock Mill Company, LLC
105-0001

WestRock has applied for a renewal of its Major Source Operating Permit 105-0001. This proposed Title V Major Source Operating Permit is issued under the provisions of ADEM Admin. Code R. 335-3-16. The above named applicant has requested authorization to perform the work or operate the facility shown on the application and drawings, plans and other documents attached hereto or on file with the Air Division of the Alabama Department of Environmental Management, in accordance with the terms and conditions of this permit.

BACKGROUND:

WestRock is an integrated bleached Kraft pulp and paperboard mill and a market bleached Kraft pulp mill located in Demopolis, Alabama. The Demopolis, AL site is located in Marengo County, which is classified as a Class II county for particulates. The mill produces bleached pulp, which is sold as market pulp or is made into either bond or offset grades of paper. The mill is divided into the following areas: Utilities, Woodyard, Pulp Mill, Board Mill Pulp Dryer, and Miscellaneous Sources. The facility is a major source with respect to Title V, PSD, NSPS, and the MACT/NESHAP standards. WestRock is a major source operating facility for the following pollutants: Filterable PM, Filterable PM_{10}, Filterable $PM_{2.5}$, Condensable PM, SO_2, NOx, CO, CO_2e, VOC, Total HAPs, Acetaldehyde, Chlorine, HCl, and Methanol.

UTILITIES

WestRock's utility area consists of a liquid recovery phase and a power and steam generation phase. The following units are the components of the liquid recover system: No. 3 Multiple-Effect Evaporator System, the No. 3 Recovery Furnace, and the No. 3 Smelt Dissolving Tank. The following units are components of the power and steam generation system: No. 5 Power Boiler and No. 5 Power Boiler. The utilities provide support services, steam, and power for the facility.

No. 3 Multiple-Effect Evaporator System

Black liquor contains the residual pulping chemicals and dissolved organic substances from wood chips. Under normal operating conditions, the brown stock washer filtrate will have a solids content of 15%. For safety concerns, WestRock fires liquor in the No. 3 Recovery Furnace that contains approximately 70% solids. To raise the solids content, the liquor is routed to a seven-effect system that includes two high solids concentrators. The condensate produced from black liquor evaporation is used in the brown stock washers, and the salt cake by-product produced from the chlorine dioxide generation is added to the weak black liquor prior to the multiple-effect evaporator system.

Control Equipment:

A condensate seal tank is vented to the low volume high concentration (LVHC) non-condensable gas system, and Kraft pulping condensate from this tank are collected and sent to the turpentine decanter, and then pumped to the aeration stabilization basin for hazardous air pollutant (HAP) destruction.

Emission Limits and Proposed Periodic Monitoring

The No. 1 Evaporator is subject to 40 CFR Part 60 Subpart BB and 40 CFR Part 63 Subpart S (MACT I). All gases discharged from the No. 3 Multiple-Effect Evaporator System that contain total reduced sulfur in excess of 5 parts per million corrected to 10% oxygen are required by Subpart BB to be incinerated in the No. 4 or No. 5 Power Boilers. All HVLC and LVHC gases are to be collected and incinerated as required by Subpart S. Subpart S also requires the annual testing and monthly inspections of the HVLC and LVHC NCG system.

No. 3 Recovery Furnace

The No. 3 Recovery Furnace burns the organic compounds contained in black liquor to generate steam and recovers the sodium and sulfur compounds used in the Kraft cooking process. The black liquor from the multiple-effect evaporator system is first mixed with salt cake makeup in the saltcake mix tank prior to being heated and sprayed into the recovery furnace.

The recovery furnace and its operation can be broken down into several sections: furnace area, convective heat transfer area, combustion air control, black liquor handling, smelt removal and dilution, and air emissions control. The hot gases from the combustion zone pass through the steam generation zone, which includes super-heater, boilers, and economizer. The No. 3 Recovery Furnace produces steam by firing up to 2,160 tons of black liquor solids per day. The No. 3 Recovery Furnace is permitted to fire No. 2 Fuel Oil, natural gas, and back liquor solids.

The EPA published 40 CFR Part 63 Subpart MM amendments on October 11, 2017, with a compliance date of October 11, 2019. The following MACT II changes are being incorporated at this time:

- For parametric monitoring, limit the times corrective actions are taken or violations are recorded to times when spent pulping liquor is fed
- Reduce the opacity excess emissions allowance from 6 percent to 2 percent
- Add reference to requirements for proper operation of the continuous opacity monitoring system (COMS)
- Include a proviso stating monitoring data recorded during periods of unavoidable CMS breakdowns, out-of-control periods, repairs, maintenance periods, calibration checks, and zero (low-level) and high level adjustments shall not be included in any data average computed
- Add the requirement to conduct periodic performance testing, with the initial test to be conducted by October 13, 2020, and thereafter no longer than 5 years following the previous test
- Add the requirement to estimate the quantity of each regulated pollutant emitted over the emission limit for each failure to meet an operation limit
- Add a proviso to maintain proper operation of the electrostatic precipitator (ESP) automatic voltage control (AVC)
- Reduce the frequency for submitting excess emissions reports from quarterly to semiannually
- Add electronic reporting requirements for excess emissions reports and performance tests through EPA's Compliance and Emissions Data Reporting Interface (CEDRI)

Control Equipment:

The No. 3 Recovery Furnace has an ESP for the control of particulate emissions.

Emission Limits and Proposed Periodic Monitoring

The No. 3 Recovery Furnace is subject to the following requirements

- Rule 335-3-10-.02 (1) and (28) New Source Performance Standards 40 CFR 60 - Subpart BB for kraft pulp mills when black liquor solids are fired
- Rule 335-3-10-.02(2)(b) New Source Performance Standards Subpart Db for nitrogen oxide emissions and 40 CFR 60 Subpart A, General Provisions when fossil fuel oil or natural gas are fired
- National Emission Standards for Hazardous Pollutants General Provisions as provided for in Table 1 of Subpart MM and 40 CFR Part 63 Subpart MM

The No. 3 Recovery Furnace has the following limits:

PM	0.021 gr/dscf @ 8% O_2 and 44.9 lbs/hr
TRS	5 ppm @ 8% O_2 and 11.0 lbs/hr
NOx	110 ppm @ 8% O_2 and 199.9 lbs/hr
Opacity	20%
SO_2	100 ppm @ 8% O2 and 252.9 lbs/hr when BLS is fired. The fuel oil sulfur content $\leq$ 0.05%
CO	300 ppm @ 8% O2 and 331.9 lbs/hr
VOC	0.04 lb/MMBtu and 43.2 lbs/hr (as carbon)
SAM	3.78 lbs/hr
HAPS	PM as a surrogate < 0.044 gr/dscf @ 8% O_2

- Yearly emissions tests will be performed for particulate matter
- For particulate matter and opacity periodic monitoring, if the average of any ten consecutive six minute opacity averages exceeds 20% the cause is to be investigated and appropriate corrective action is to be taken
- A continuous TRS monitor (CEMs), NOx (CEMs) and continuous opacity monitor (COMs) shall be installed, maintained, and operated
- Records of all three hour block average black liquor firing rates for this unit shall be maintained for PM, SO2, NOx, VOC, CO, and SAM periodic monitoring
- Since this source is subject to MACT II, it is required to submit semi-annual excess emission reports and must comply with the monitoring and reporting requirements of Subpart MM
- WestRock is required to submit quarterly excess TRS and NOx emission reports
- WestRock shall perform and submit an emission test for SO_2, NOx, CO, VOC, and SAM once every five years
- WestRock is required to keep fuel receipts detailing the sulfur content of every load of fuel oil received

No. 3 Smelt Dissolving Tank

The No. 3 Smelt dissolving tank uses weak wash to dissolve the inorganic residue from the combustion of black liquor solids in the No. 3 Recovery Furnace. It is equipped with two agitators to maintain uniform green liquor strength. The green liquor product from the smelt tank is pumped to a green liquor clarifier and then to the recausticizing to be recovered as white liquor.

The EPA published 40 CFR Part 63 Subpart MM amendments on October 11, 2017, with a compliance date of October 11, 2019. The following MACT II changes are being incorporated at this time:

- For parametric monitoring, limit the times corrective actions are taken or violations are recorded to times when spent pulping liquor is fed
- Add the startup and shutdown exception for maintaining wet scrubber pressure drop
- Include a proviso stating monitoring data recorded during periods of unavoidable CMS breakdowns, out-of-control periods, repairs, maintenance periods, calibration checks, and zero (low-level) and high level adjustments shall not be included in any data average computed
- Add the requirement to conduct periodic performance testing, with the initial test to be conducted by October 13, 2020, and thereafter no longer than 5 years following the previous test
- Add the requirement to estimate the quantity of each regulated pollutant emitted over the emission limit for each failure to meet an operation limit
- Reduce the frequency for submitting excess emissions reports from quarterly to semiannually
- Add electronic reporting requirements for excess emissions reports and performance tests through EPA's Compliance and Emissions Data Reporting Interface (CEDRI)

Control Equipment*:*
The vent stack in the dissolving tank is fitted with a scrubber system including an exhaust fan. The dissolving tank gases are routed to the wet dynamic fan scrubber where weak wash is used to absorb the gases and control the entrained particulate matter.

Emission Limits and Proposed Periodic Monitoring
The No. 3 Smelt Dissolving Tank is subject to:

- 40 CFR 60 Subpart A and Subpart BB
- ADEM Admin. Code 335-3-4-.01 for opacity
- 40 CFR Part 63 Subpart MM

The No. 3 Smelt Dissolving Tank has the following limits:

PM	0.12 lbs/ton BLS and 8.3 lbs/hr
SO_2	5 lbs/hr
TRS	0.033 lb/ton BLS and 2.3 lbs/hr
Opacity	$\leq$ 20 percent with one six-minute period up to 40 percent in any one hour period
HAPS	PM as a surrogate < 0.2 lbs/ton BLS

- Yearly particulate matter emissions tests are required to be performed and submitted
- Since this source is subject to MACT II, it is required to submit semi-annual excess emission reports and must comply with the monitoring and reporting requirements of Subpart MM
- For PM, TRS, and SO_2 periodic monitoring, WestRock shall monitor and maintain records of all the three-hour block average liquor firing rate
- For TRS, and SO_2 periodic monitoring, WestRock shall monitor and maintain records of all the three-hour block average scrubber weak wash or caustic makeup flow rate
- For PM periodic monitoring, WestRock shall monitor and maintain records of all the three-hour block average scrubber pressure drop or scrubber weak wash or caustic makeup flow rate
- WestRock shall perform and submit a TRS and SO_2 emission test once every five years
- Pursuant to 40 CFR Part 63, Subpart MM, WestRock shall monitor the wet scrubber liquid supply flow rate and the fan rpm

No. 4 Power Boiler
The No. 4 Power Boiler is a Mesto Power model Metso Hybex BFB boiler with a rated capacity input of 550.58 MMBtu/hr. Biomass is the primary fuel used while natural gas is a standby fuel. No more than 3,129 MMSCF of natural gas may be fired in No. 4 & 5 Power Boilers combined during a 12 month period. NCGs from the K-1 Digester System, K-2 Digester System, No. 3 Multiple Effect Evaporator System, Turpentine Recovery, A-Line and B-Line Pulp washing Systems would be predominately incinerated in the No. 4 Power boiler and would be routed to the No. 5 Power Boiler when the No. 4 is not in service.

Control Equipment:
This boiler has a number of pollution control devices installed including: a baghouse, a selective non-catalytic reduction system, a sorbent injection system, and an activated carbon injection system.

Emission Limits and Proposed Periodic Monitoring
The No. 4 Power Boiler is subject to:

- 40 CFR Part 60 Subpart Db
- 40 CFR Part 63 Subpart DDDDD

The No. 4 Power Boiler has the following limits:

Filterable PM	0.0098 lb/MMBtu
PM_{10}	0.024 lb/MMBtu
$PM_{2.5}$	0.023 lb/MMBtu
NOx	$\leq$ 0.20 lb/MMBtu (30-day rolling average) $\leq$ 342.5 tons/12 month rolling period, combined from this unit and No. 5 Power Boiler
SO_2	$\leq$ 332 tons/12-month rolling period, combined from this unit and No. 5 Power Boiler
CO	$\leq$ 310 ppmv corrected to 3% O_2 (30 day rolling average)
CO_2e	$\leq$ 194,619 tons/12-month rolling period, combined from this unit and No. 5 Power Boiler
Opacity	$\leq$ 20 percent with one six-minute period up to 27 percent in any one hour period
Opacity	$\leq$ 10 percent (daily block average)
HCl	$\leq$ 0.022 lb/MMBtu
Mercury	$\leq 8x10^{-7}$ lb/MMBtu

- Yearly emissions tests will be required for particulate matter
- WestRock shall install a CO, NOx, Opacity, and SO_2 CEMs on this unit which measures these emissions in accordance with 40 CFR Part 60 Appendix F
- Annual testing of mercury and hydrogen chloride will be required unless two consecutive performance tests demonstrate that the controlled emissions are less than 75 percent of the respective emission limits, in which case testing will be required every three years with no more than 37 months between tests (Boiler MACT)
- The Boiler MACT requires the installation of an CO analyzer system in order to ensure compliance with carbon monoxide limits. The carbon monoxide concentration would be continuously monitored and reduced to a 30-day rolling average
- The Boiler MACT requires a one-time energy assessment, annual tune-ups, and new startup and shutdown procedures. All of these requirements are found in Table 3 of the Subpart

No. 5 Power Boiler

The No. 5 Power Boiler is a Babcock and Wilcox model FM 120-124 LH boiler with a rated capacity input of 270 MMBtu/hr and fires natural gas only. No more than 3,129 MMSCF of natural gas may be fired in No. 4 & 5 Power Boilers combined during a 12-month period. NCGs would be burned in the No. 5 Power Boiler when the No. 4 Power Boiler is not in service.

Control Equipment:

The No. 5 Power Boiler has a wet scrubber to control SO_2 emissions.

Emission Limits and Proposed Periodic Monitoring

The No. 5 Power Boiler is subject to:

- 40 CFR Part 60 Subpart Db
- 40 CFR Part 63 Subpart DDDDD

The No. 5 Power Boiler has the following limits:

NOx	≤0.20 lb/MMBtu (30-day rolling average) ≤ 342.5 tons/12-month rolling period, combined from this unit and No. 4 Power Boiler
SO_2	≤ 332 tons/12-month rolling period, combined from this unit and No. 4 Power Boiler
CO_2e	≤ 194,619 tons/12-month rolling period, combined from this unit and No. 4 Power Boiler
Opacity	≤20 percent with one six-minute period up to 27 percent in any one-hour period

- WestRock shall install a SO_2, O_2, and NOx CEMs on this unit which measures these emissions in accordance with 40 CFR Part 60 Appendix F
- The Boiler MACT requires a one-time energy assessment, annual tune-ups, and new startup and shutdown procedures. All of these requirements are found in Table 3 of the Subpart

RECAUSTICIZING AREA

The Recausticizing area and No. 3 Lime Kiln are integral to the recovery of pulping chemicals and the conversion of these chemicals back to active ingredients. This is part of the recovery loop which also includes the multiple-effect evaporator system and recovery furnace. Recausticizing is the conversion of sodium carbonate in green liquor to sodium hydroxide in white liquor by a reaction with lime. The green liquor from the smelt dissolving tank is combined with reburned lime from the lime kiln. Then it is transferred to an agitated tank known as a slaker. From the slaker the mixture flows to a series of three causticizers which convert the sodium carbonate to sodium hydroxide and calcium oxide (lime) to calcium carbonate (lime mud). The slurry is transferred from the last causticizer to a clarifier to settle out the lime mud, and the white liquor is pumped to a white liquor storage tank for use in the digester.

No. 3 Lime Kiln

The clarified lime mud slurry is pumped from the mud storage tank and is then vacuumed filtered to remove the sodium compounds and water. The high solids lime mud is then fed to a rotary kiln where it is dried and burned to drive off the CO_2 and recover the lime to be re-used in the recausticizing process. The lime kiln is currently permitted to fire natural gas, fuel oils containing less than 3.2 percent sulfur.

The EPA published 40 CFR Part 63 Subpart MM amendments on October 11, 2017, with a compliance date of October 11, 2019. The following MACT II changes are being incorporated at this time:

- For parametric monitoring, limit the times corrective actions are taken or violations are recorded to times when lime mud is fed
- Add the startup and shutdown exception for maintaining wet scrubber pressure drop
- Include a proviso stating monitoring data recorded during periods of unavoidable CMS breakdowns, out-of-control periods, repairs, maintenance periods, calibration checks, and zero (low-level) and high level adjustments shall not be included in any data average computed
- Add the requirement to conduct periodic performance testing, with the initial test to be conducted by October 13, 2020, and thereafter no longer than 5 years following the previous test
- Add the requirement to estimate the quantity of each regulated pollutant emitted over the emission limit for each failure to meet an operation limit
- Reduce the frequency for submitting excess emissions reports from quarterly to semiannually

- Add electronic reporting requirements for excess emissions reports and performance tests through EPA's Compliance and Emissions Data Reporting Interface (CEDRI)

Control Equipment:
The lime kiln is equipped with an Electrostatic Precipitator to control particulate emissions.

Emission Limits and Proposed Periodic Monitoring
The lime kiln is subject to:

- the requirements of ADEM Admin. Code 335-3-4-.01 for opacity
- 40 CFR Part 63 Subpart MM (MACT II) for HAPs
- 40 CFR Part 60 Subpart BB for TRS and PM

The lime kiln has the following limits:

Particulate Matter (gas)	0.035 grains/SDCF @ 10% O_2 and 22.0 lb/hr
Particulate Matter (oil)	0.064 grains/SDCF @ 10% O_2 and 42.0 lb/hr
Sulfur Dioxide	44.0 ppmv @ 10% O_2 and 32.1 lb/hr. Fuel oil firing of < 3.2 % sulfur content
Nitrogen Dioxide	175 ppmv @ 10 % O_2 and 91.8 lb/hr
Total reduced sulfur	≤ 3.1 lbs/hr and 8 ppm @ 10 % O_2
Opacity	≤20 % with one six-minute period up to 40% in any one hour period
HAPS	PM as a surrogate < 0.15 g/dscm (0.064 gr/dscf) @ 10 % O_2
VOC	0.69 lbs/ton of CaO and 18.8 lbs/hr (as carbon)
CO	80 ppmv @ 10 % O_2 and 25 lbs/hr.
SAM	1.2lbs/hr.

- Yearly emissions tests will be required for particulate matter
- For particulate matter and opacity periodic monitoring, if the average of any ten consecutive six minute opacity averages exceeds 20% the cause is to be investigated and appropriate corrective action is to be taken
- A continuous TRS monitor (CEMs) and continuous opacity monitor (COMs) shall be installed, maintained, and operated
- Records of all three hour block average lime mud flow rate for this unit shall be maintained for at least five years for PM, SO_2, NOx, VOC, CO, and SAM periodic monitoring
- Since this source is subject to MACT II, it is required to submit semi-annual excess emission reports and must comply with the monitoring and reporting requirements of Subpart MM
- WestRock is required to submit quarterly excess TRS and Opacity emission reports
- WestRock shall perform and submit an emission test for SO_2, NOx, CO, VOC, and SAM once every five years

PULP MILL:
The pulp mill operation at the Demopolis Mill is comprised of several areas. The major processes include the digesters, pulp washing and screening, and the bleach plants. The ancillary processes include the turpentine recovery, noncondensable gas (NCG) collection, and the chlorine dioxide generation facility.

The pulp mill is divided into a softwood and hardwood line. The softwood line consists of the No. 1 Kamyr digester, the "B" line pulp washing system, and the No. 1 Bleach Plant. The hardwood line includes the No. 2 Kamyr digester, the "A" line pulp washing system, and the No. 2 Bleach Plant.

Brown Stock Washing System

The function of the pulp washing systems in to wash out the residual cooling liquor from the pulp. The brown stock washing system is the area in the pulp mill in which cooked brown stock are converted into unbleached pulp. This includes deknotting, pulp washing, screening, decker dewatering, and storage.

The Demopolis Mill operates separate softwood and hardwood pulp washing lines. Both pulp washing systems are similar in operation. From the digester blow tank, the pulp enters the first of three stages of washing. The washing system uses a countercurrent wash sequence. After the third stage of washing, the pulp is placed in a storage chest prior to being processed through a knotter and then screened. Following the screening section, the pulp is dewatered on a decker and then sent directly to the bleach plant.

Control Equipment:

Emissions from the pulp washing stages, decker stages, filtrate chests, and foam tower are collected in a High Volume Low Concentration (HVLC) non-condensable gas system. 40 CFR Part 63 Subpart S requires that these gases be controlled. These gases are then routed to either the No. 4 or No. 5 Power Boiler for incineration, which is one of the listed control options in 40 CFR Part 63 Subpart S.

Emission Limits and Proposed Periodic Monitoring

The brown stock system is subject to 40 CFR Part 63 Subpart S (MACT I). All HVLC gases discharged from the Brown Stock Washers are required to be incinerated in the No. 4 or No. 5 Power boiler as require by Subpart S. Subpart S also requires annual testing and monthly inspections of the HVLC NCG system.

Digesters

The pulp mill currently has two single-vessel Kamyr digesters. Both are operated similarly. Wood chips from the storage silos are first fed to a digester chip feeder. WestRock uses the Kraft process for the conversion of wood chips into pulp, which involves the use of sodium hydroxide and sodium sulfide mixture (referred to as white liquor) and pressure to "cook" the wood chips which dissolves the lignin in the wood. At the end of the cook, the pulped wood chips are released to a blow tank.

Control Equipment:

Each digester has low volume high concentration (LVHC) and high volume low concentration (HVLC) gas sources which are required to be collected and treated by 40 CFR Part 63 Subpart S. The No. 1 Kamyr digester condensates are collected and treated through the turpentine recovery system and aeration stabilization. The No. 2 Kamyr digester condensates are collected and treated in the aeration stabilization basin. WestRock has also elected to control these emissions by routing these gases to the No. 4 and No. 5 Power Boilers for incineration.

Emission Limits and Proposed Periodic Monitoring

The No. 1 Kamyr digester is subject to 40 CFR Part 63 Subpart S (MACT I). The No. 2 Kamyr digester is subject to 40 CFR Part 60 Subpart BB and 40 CFR Part 63 Subpart S (MACT I). All gases discharged from No. 2 Kamyr Digester that contain total reduced sulfur in excess of 5 parts per million corrected to 10% oxygen are required to be incinerated in the power boilers on the facility as require by Subpart BB. All HVLC and LVHC gases are to be collected and incinerated as required by Subpart S. Subpart S also requires annual testing and monthly inspections of the HVLC and LVHC NCG system.

No. 1 and No. 2 Bleach Plant

The bleaching is carried out in a continuous, step-wise sequence which is divided into two parts, delignification and brightening. In the first stage CLO_2 is added which makes the lignins soluble in alkaline solutions, then in the second stage caustic is added to neutralize the mixture and aid the extraction and stabilization of the pulp. The pulp is then thoroughly washed to remove the remaining lignin and other contaminates. In the third and fourth stages CLO_2 is added to whiten the pulp to customer specifications. The No. 1 Bleach Plant uses a D_{100}-E_{OP}-D-E_P-D bleaching sequence. The No. 2 Bleach Plant uses a D_{100}-E_{OP}-D bleaching sequence. The Bleach Plants are subject to 40 CFR Part 63 Subpart S (MACT I).

Control Equipment:

The bleach plants are equipped with scrubbing systems to remove residual Cl & ClO_2 fumes from vent exhausts. The No. 1 Bleach Plant Scrubber removes residual Cl & ClO_2 fumes from the chlorinated tower, washer, and filtrate tank, the first and second chlorine dioxide bleach towers, washers, and filtrate tanks, and the first and second caustic extraction washers and filtrate tanks. A weak caustic is used as the scrubbing medium in the packed tower.

The No. 2 Bleach Plant Scrubber uses white liquor to absorb residual Cl and ClO_2 vapors from vent gases collected from ten sources in the No. 2 Bleach Plant. The following sources vent to the No. 2 Bleach Plant Scrubber: two vents from the D_{100} bleach tower, the D_{100} stage washer hood, the D_{100} stage seal tank, the E_{OP} washer, the E_{OP} stage seal tank, two vents from the ClO_2 bleach tower, the D-1 stage washer hood, and the D-1 stage seal tank.

Emission Limits and Proposed Periodic Monitoring

The equipment at each bleaching stage of the bleaching system where chlorinated compounds are introduced is required be enclosed and vented into a closed-vent system and routed to a control device which meets the requirements as specified in 40 CFR Part 63 Subpart S. To reduce chloroform emissions, WestRock has elected to comply with the guidelines as specified in 63.445(d)(1) by not using hypochlorite or chlorine for bleaching in the bleaching system.

The bleach plants are subject to federal and state standards. They have state ClO_2 and Cl emission limits. The No. 1 Bleach Plant's ClO_2 and Cl emission limits are 2.38 lb/hr and 8.12 lb/hr, respectfully. The No. 2 Bleach Plant's ClO_2 and Cl emission limits are 4.00 lb/hr and 6.00 lb/hr, respectfully. The Mill is required to perform emissions testing at least once per 5 year permitting period.

Chlorine Dioxide Plant

Since chlorine dioxide is an extremely unstable compound at room temperature and pressure and can not be easily stored, WestRock produces it on-site. ClO_2 is generated as a gas from the reaction of sodium chlorate with sulfuric acid which uses methanol as a catalyst. The gas is absorbed in chilled water. The methanol is received by truck and stored in a 15,000 gallon tank. The methanol storage tank is no longer subject to 40 CFR Part 60 Subpart Kb.

The ClO_2 generating system consists of a generator/crystallizer, reboiler, indirect heat exchanger, generator dump tank, chlorine dioxide absorption tower, scrubber tower, salt cake filter, and vacuum system. The sodium chlorate, sodium chloride, sulfuric acid, and methanol are combined in the generator/crystallizer which produces gaseous chlorine dioxide, a precipitate of salt cake and a trace amount of chlorine gas. The vacuum system pulls the vapors from the generator and into the collection system.

Control Equipment:

Gases from the generator are cooled in a heat exchanger. The condensate and gases flow to an absorption tower where chilled water is used to absorb the ClO_2. The gases that are not absorbed pass through to a barometric condenser, and into the tail gas scrubber. The scrubber also collects the vent gases from the chlorine

dioxide storage tanks. The scrubber uses chilled water as its scrubbing medium. The following units vent to the tail gas scrubber: the ClO_2 absorption tower, the salt cakes filter, and the north and south ClO_2 solution storage tanks.

Emission Limits and Proposed Periodic Monitoring

The ClO_2 generator is not subject to any federal standards, but there are State air-toxic ClO_2 and Cl emission limits of 3.04 lb/hr and 1.43 lb/hr respectfully. The daily monitoring for this unit is to measure and record the scrubber liquid temperature and scrubber liquid flow rate and perform emissions testing at least once per 5 year permitting period.

PAPER MACHINE

The board mill utilizes one board machine to produce coated and uncoated paperboard from the bleached pulp. In addition to coated board, the Demopolis Mill produces bleached Kraft market pulp on the pulp dryer machine.

Paper Machine

Once pulp from the pulp mill has been refined through the addition of various compounds to reach the desired physical properties, it is pumped to a centrifugal cleaner system. This system cleans and removes other contaminates, the good stock is transferred to a collection tank where it is transferred through a pressure screen to the headbox of the paper machine. The headbox controls the manner in which the stock passes onto the paper machines wire to form a uniform paper mat. The water removed from the stock flowing down the wire drains into a collecting tank for re-use. After the paper web is removed from the wire it passes through two press sections, then to the drying section of the paper machine which is heated by steam from the plant. After the dryer section, the sheet passes through the coater section and is then wound on a reel drum.

Control Equipment:

The paper machine has no add on control equipment installed. The machine is required to use clean water in the process.

Emission Limits and Proposed Periodic Monitoring

Since the paper machine has no specific limits, no periodic monitoring is necessary.

RICE UNITS:

WestRock operates five (5) stationary Reciprocating Internal Combustion Engines (RICE) units that provide emergency power or water to different areas of the Mill. These units are identified and described by the following:

- X031 - Chlorine Dioxide Plant Emergency Power Generator; 2011; 93 Hp
- X031 - First Aid Emergency Power Generator; 2011; 79 Hp
- X032 - Log Scales Emergency Generator; 2010; 32 Hp
- Emergency Firewater Pump Engine; 1984; 250 Hp
- No. 3 Lime Kiln Emergency Drive Engine; 1995; 133 Hp

All of these units except the Log Scales Emergency Generator is diesel powered, emergency-use units, and based on the year, size, and purpose, are subject to the following regulations:

- Emergency Firewater Pump Engine, and No. 3 Lime Kiln Emergency Drive Engine are subject to the applicable requirements of ADEM Admin. Code R. 335-3-11-.06(103), "National Emission Standards for Hazardous Air Pollutants (NESHAPs) for Hazardous Air Pollutant (HAP) Emissions from Stationary Reciprocating Internal Combustion Engines" (40 CFR Part 63 Subpart ZZZZ).

- Units X031 are subject to the applicable requirements of ADEM Admin. Code R. 335-3-10-.02(87), "Standards of Performance for Stationary Compression Ignition Internal Combustion Engines" (40 CFR Part 60 Subpart IIII)
- Unit X032 is subject to the applicable requirements of ADEM Admin. Code R. 335-3-10-.02(88), "Standards of Performance for Stationary Spark Ignition Internal Combustion Engines" (40 CFR Part 60 Subpart JJJJ)

NESHAP ZZZZ, NSPS IIII, and NSPS JJJJ require these units to adhere to the following standards:

Point Description	Pollutant	Emission Limit
Chlorine Dioxide Plant Emergency Power Generator, First Aid Emergency Power Generator, Log Scales Emergency Generator, Emergency Firewater Pump Engine, No. 3 Lime Kiln Emergency Drive Engine	Opacity	≤ 20% as determined by six-minute average, with one six-minute period up to 40% in any one hour period.
Chlorine Dioxide Plant Emergency Power Generator, First Aid Emergency Power Generator, Emergency Firewater Pump Engine, No. 3 Lime Kiln Emergency Drive Engine	HAPs	a. Change oil and filter every 500 hours of operation or annually, whichever comes first; b. Inspect air cleaner every 1,000 hours of operation or annually, whichever comes first; c. Inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary.
Log Scales Emergency Generator	HAPs	a. Change oil and filter every 500 hours of operation or annually, whichever comes first; b. Inspect spark plugs every 1,000 hours of operation or annually, whichever comes first; c. Inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary.
Chlorine Dioxide Plant Emergency Power Generator, First Aid Emergency Power Generator, Emergency Firewater Pump Engine, No. 3 Lime Kiln Emergency Drive Engine	Sulfur Dioxide	≤ 15 ppm fuel oil sulfur content

CAM

CAM applies to pollutant specific emission units that are subject to an emission limitation or standard where a control device is used to achieve compliance with an applicable emission limitation. The CAM rule requires facilities to monitor compliance indicators for emission units to provide reasonable assurance for compliance with regulatory emission limitations. This facility currently has units subject to CAM; however, they meet the exemption requirements.

There are two exemptions that apply to one or more emission units operated by the mill:

- The requirements of Part 64 shall not apply to emission limitations or standards proposed by EPA after November 15, 1990, pursuant to section 111 or 112 of the Clean Air Act (40 CFR 64.2(b)(1)(i))
- The requirements of Part 64 shall not apply to emission limitations or standards for which a Part 70 or 71 permit specifies a continuous compliance determination method (40 CFR 64.2(b)(1)(vi))

The first exemption applies to emission limitations for air pollutants from NSPS or NESHAP proposed after November 15, 1990. The Mill operates several emission units subject to 40 CFR Part 63 – Subpart S, and MM. The following are the units subject to these standards:

- No. 3 Recovery Furnace (PM & HAP): Subject to 40 CFR Part 63 – Subpart MM
- Brown Stock Washer (HAP): Subject to 40 CFR Part 63 – Subpart S
- No. 1 Bleaching System (Cl): Subject to 40 CFR Part 63 – Subpart S
- No. 2 Bleaching System (Cl): Subject to 40 CFR Part 63 – Subpart S
- No. 3 Smelt Dissolving Tank (PM & HAP): Subject to 40 CFR Part 63 – Subpart MM
- No. 3 Lime Kiln (PM & HAP): Subject to 40 CFR Part 63 – Subpart MM
- K-2 Digester System (HAP): Subject to 40 CFR Part 63 – Subpart S
- No. 3 Multiple Effect Evaporator System (HAP): Subject to 40 CFR Part 63 – Subpart S

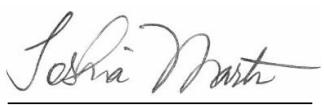
As a result, these emission units must comply with the monitoring requirements prescribed in the applicable standard rather than the requirements of 40 CFR Part 64.

The Mill also monitors scrubber flow continuously on a three-hour block average for the following sources as a parametric indicator for proper control of particulate matter emissions:

- No. 3 Smelt Dissolving Tank (X023)

The existing periodic monitoring systems for scrubber flow satisfy the compliance assurance monitoring requirements for particulate matter emissions from these emission units. Furthermore, the existing periodic monitoring system for scrubber flow also satisfies the compliance assurance monitoring requirements for TRS emissions from the No. 3 Smelt Dissolving Tank.

Consistent with the requirements of the existing Title V Operating Permit, the Mill operates and maintains continuous monitoring systems for sulfur dioxide emissions from the No. 4 and No. 5 Power Boilers. Because these continuous compliance determination methods have already been prescribed in the existing Title V Operating Permit, the Compliance Assurance Monitoring rule does not apply to these pollutant specific emission units.



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Date